**POLARITY MODELS**

**Each kit** **should contain:**

**12 red spheres – oxygen atoms**

**24 white pieces – hydrogen atoms**

**1 blue sphere – sodium atom**

**1 green sphere – chlorine atom**

**2 gray pieces – carbon atoms**

**1 baggie containing: 1 red & white piece – hydroxide ion**

 **6 white pieces (1 with a peg) – hydrogen atom**

**\*\*make sure to keep the pieces from the baggie separate from the rest of the kit!\*\***

**Activity 1: polarity of water investigation**

Construct 12 water molecules by attaching the white hydrogen atoms to the 12 oxygen atoms

1. Which ends of the water molecules attract one another?
2. Which ends of the water molecules repel one another?
3. Draw the Lewis structure of water, then explain these phenomena from #1 and #2.

**Activity 2: solubility of salt (bond strength of sodium chloride and dissociation constants)**

Make a salt compound by combining the sodium with the chlorine. Note the strength of the “bond” by pulling apart the two atoms. Now, one by one attach the water molecules you made in activity 1 and dissociate the sodium from the chlorine.

1. Which ends of the water molecule attach to each of the ions found in salt?
2. Is salt considered polar or nonpolar? Why?
3. Draw the Lewis structures of water and salt (sodium chloride), then explain this phenomenon.
4. How many water molecules does it require to easily dissociate the two ions of sodium chloride from one another?
5. How many ionized particles do you get when you dissociate salt in water?

**\*Remember the ionization # we used in the boiling/freezing point calculations?\***